

What is claimed is:

1. A method for producing a semiconductor component (100;...; 2200), in particular a multilayer semiconductor element, preferably a micromechanical component, in particular a pressure sensor, having a semiconductor substrate (101), in particular made of silicon, wherein a first porous layer (104; 1001; 1301) is produced in the semiconductor component in a first step; and a hollow or cavity (201; 1101; 1201; 1401; 2101; 2201) is produced in the semiconductor component under or from the first porous layer (104; 1001; 1301) in a second step, with the hollow or cavity capable of being provided with an external access opening.

2. The method according to Claim 1, wherein the second step has a first sub-step, during which a second porous layer (105) having a porosity of more than approximately 70% and less than 100%, preferably approximately 85 to 95%, is produced under the first porous layer (104).

3. The method according to Claim 2, wherein the hollow or cavity (201) is produced from the second porous layer by an annealing step.

4. The method according to Claim 1, wherein during a first sub-step of the second step an access opening or hollow (1101; 1201; 1401) open on one side is formed in the direction of the first porous layer (1001; 1301) and/or on a second porous layer, with the first and/or second porous layer preferably being partially or completely removed via the access opening or hollow open on one side.

5. The method according to Claim 1, wherein the second step has a first sub-step, during which an initially planar hollow is formed under the first porous layer (104), and the initially planar hollow increases in depth and

thus the hollow or cavity (201) results from the initially planar hollow.

6. The method according to one of Claims 1 to 5, wherein the first and/or second porous layer (104, 105) is/are formed by one or more etching media, with the etching medium and/or the etching media preferably including hydrofluoric acid, HF acid, or comprising hydrofluoric acid.

7. The method according to Claim 6, wherein the etching medium or the etching media is/are provided with one or more additives, such as additives for reducing bubble formation, for improving wetting, and/or for improving drying, particularly an alcohol, such as ethanol, with the volume concentration of the additives, particularly ethanol, being approximately 60% to approximately 100% for ethanol.

8. The method according to one of Claims 1 to 7, wherein the first and/or second porous layer (104, 105) is produced by applying an electrical field between the top and bottom of the semiconductor element (100;...; 2200) and establishing an electric current.

9. The method according to one of Claims 1 to 8, wherein the process parameter for producing the second porous layer (105), i.e., for producing the initially planar hollow is selected so that the expansion rate of the pores or hollows in the second porous layer is significantly higher than the expansion rate of the pores or hollows for producing the first porous layer (104).

10. The method according to one of Claims 5 to 9, wherein the process parameters for producing the initially planar hollow are selected so that the pores or hollows of the second porous layer (105) "overlap" one another in the lateral

direction and thus one single initially planar pore or one single initially planar hollow is formed.

11. The method according to one of Claims 6 to 10, wherein the doping of the semiconductor substrate (101) to be etched, particularly a silicon substrate, the current density in the etching medium or in the etching media, the hydrofluoric acid concentration in the etching medium or in the etching media, one or more additives to the etching medium or to the etching media, and the temperature represent process parameters.

12. The method according to one of Claims 1 to 11, wherein the hydrogen enclosed in the cavity or hollow (201) is partially or completely removed from the cavity or hollow in the course of a high-temperature step.

13. The method according to one of Claims 1 to 12, wherein an epitaxial layer (301; 401), for example a silicon layer, which is preferably monocrystalline, is deposited on the first porous layer (104).

14. A semiconductor component (100;...; 2200), particularly a multilayer semiconductor component, preferably a micromechanical component, particularly a pressure sensor, having a semiconductor substrate (101), particularly made of silicon, and a hollow or cavity (201; 1101; 1201; 1401; 2101; 2201), with the hollow or cavity capable of being provided with an external access opening, characterized by a porous layer (104; 1001; 1301) above the hollow or cavity.

15. A semiconductor component (100;...; 2200), particularly a multilayer semiconductor component, preferably a micromechanical component, particularly a pressure sensor, having a semiconductor substrate (101), particularly made of silicon,

wherein it is produced with a method according to one or more of Claims 1 to 13.